Manuscript ID:
IJEBAMPSR-2025-020205

Volume: 2

Issue: 2

Month: April

Year: 2025

E-ISSN: 3065-9140

Submitted: 05-Jan-2025
Revised: 10-Feb-2025
Accepted: 20- Mar-2025
Published: 30-Apr-2025

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DOI: 10.5281/zenodo.15813210

DOI Link:
https://doi.org/10.5281/zenodo.15813210

Artificial intelligence: on human resource management Impact

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Abstract

The reality of artificial intelligence in human resource (HR) management differ significantly. The complexity of HR phenomena, limitations imposed by small data sets, accountability issues related to fairness and other ethical and legal constraints, and potential unfavorable employee reactions to management decisions via data-based algorithms are the four challenges this article identifies when applying data science techniques for HR tasks. Then, utilizing three overlapping principles—causal reasoning, randomization and experiments, and employee contribution—it suggests workable solutions to these problems that would be both socially and economically acceptable for applying data science to employee management. The revolutionary effects of artificial intelligence (AI) on human resource management (HRM) are examined in this study paper. This study explores the advantages and difficulties of implementing AI in HR, given the growing integration of AI tools into a range of HR tasks, including hiring, training, performance reviews, and employee engagement. The report also discusses the evolving role of HR experts, ethical issues, and recommendations for the thoughtful incorporation of AI into HRM. Through process automation, better decision-making, and improved employee experiences, AI is revolutionizing HRM. Automated Resume Screening: AI technologies are able to more quickly and precisely scan and filter resumes. Chatbots for First Contact: AI chatbots answer questions from candidates and do first interviews.

Bias Reduction: *Although caution must be exercised to prevent algorithmic bias, algorithms can aid in the reduction of unconscious bias in hiring.*

Keywords: *Artificial Intelligence, Human Resources Technology, Talent Management, Employee Recruitment, Allocation of Human Resources*

Introduction

Over the years, the globe has kept moving in the direction of a digital future. Nowadays, technology plays a significant and essential role in daily life, and this development is fueled by a number of factors. Customers want quick fixes for their problems and fast, smooth digital experiences as they become more tech-savvy. As a result, businesses are transforming their operations by utilizing technology more quickly and rethinking organizational structures, business models, and procedures. Businesses might see advantages like reduced expenses and increased productivity by investing more in technology, and they can better satisfy stakeholders' demands. For example, a bank was able to decrease the time required for preliminary approval and reduce the cost of a new mortgage by 70% by digitizing its mortgage application and decision process. Due in large part to the availability of big data and the development of advanced methods and infrastructure, artificial intelligence (AI) has become a top technology goal for enterprises in recent years [1]. According to a recent Gartner survey, the number of businesses using AI has tripled in the last year and increased by 270% over the previous four years [2].

How to Cite this Article:
Dalvi, N. (2025). Artificial intelligence: on human resource management Impact. International Journal of Economics, Business, Accounting, Agriculture and Management Towards Paradigm Shift in Research (IJEBAMPSR), 2(2), 20–24. https://doi.org/10.5281/zenodo.15813210

Organizations that are starting to use AI solutions are encountering a number of obstacles that hinder them from achieving performance improvements, despite the excitement surrounding the potential business value that AI may offer [3,4]. Seven out of ten businesses stated in a 2019 global CEO research that was published in the MIT Sloan Management Review that artificial intelligence has had little to no impact on their firm.

The study's objectives are as follows:

- To determine how artificial intelligence affects human resource management;
- To determine how AI-based software helps hire the best talent from the industry;
- To assess the effectiveness of AI-based software, particularly with regard to the screening process, which is the main hiring procedure, and the expense of using such systems;
- To comprehend how AI-based software affects recruiters' jobs;

Literature Review

Role of AI in HRM AI's contribution to human resource management has been growing rapidly, changing practically every important aspect of HRM. AI has been more and more incorporated into various operational HR procedures as a result of the large volume of data pertaining to labor management and organizational operations. According to Votto et al. (2021), the goal of this integration is to support sustainable business structures. AI in HRM makes it simpler for businesses to find highly qualified workers, which results in a more effective hiring process (Meshram, 2023). A new approach to personnel management is provided by clever AI technologies, which improve overall business performance and offer a variety of performance management alternatives (Khaled et al., 2023; Hemalatha et al., 2021). AI-powered training allows businesses to transform int0

Potential outcomes of artificial intelligence technologies in HRM

Accuracy: For the past 20 years, the use of AI technology in HR management has been a developing trend. According to studies, artificial intelligence (AI) offers human resources professionals promising solutions for everything from applicant screening to employee retention by taking over repetitive and time-consuming tasks from the HR team. This improves the quality of HR processes by eliminating biases (Hmoud & Várallyai, 2020).

Automation: Organizations are using AI technology to automate repetitive tasks and help with more precise decision-making by using extrapolative algorithms for carefully thought-out choices. Machine learning technology is more accurate than humans at predicting the future and identifying problems. AI will undoubtedly outperform humans in the hiring process when it comes to choosing candidates. It can also eliminate a number of biases that are commonly present during the hiring process. AI can reduce human errors and risks while producing the most accurate results. Errors are almost impossible to make, and AI is capable of greater accuracy and precision. There are encouraging outcomes from AI technologies, like decreased workload, AI technologies do have promising results, such as reduced workload, accuracy, cost-effectiveness, and lack of prejudice. Recent developments in artificial intelligence have made it possible to automate systems that undergo a full transformation. Remarkable results are obtained by combining the natural learning process with deep learning algorithms, such as the automatic creation of content from natural language, the translation of human-language speeches or texts, and the extraction of insights from human language. AI has helped HR professionals by automating repetitive and administrative chores. For HR professionals, there are several administrative tasks that are both necessary and redundant, such as posting jobs, sourcing, screening, setting up meetings and interviews, creating calendars and timesheets, documenting and confirming accounts, and so on. Let's say AI can automate all of these tasks. In such instance, it will greatly help the HR professionals by freeing them from repetitive tasks and allowing them to devote more time to strategic and creative thinking and decision-making.

Computing power & capacity: Modern organizations deal with vast amounts of data and information, and they need to use technology like artificial intelligence (AI) to become more clever and creative (McCarthy et al., 2019). Artificial Intelligence (AI) is purposefully created to be highly effective, profitable, and to help humans reduce their tedious tasks (Khatri et al., 2020). When AI and human resources are combined, managers may use real-time human resource

configuration monitoring and harness the potential of human resources, which can enhance overall management and work efficiency and help businesses achieve high quality and advancement (MaWang et al., 2020). With the use of AI technologies and Big Data, the computational power of AI has made it possible to automate and, consequently, analyze vast amounts of organizational data.

Real-time experience: Experience in real time AI chatbots make it possible to engage employees in real time and digitize HR procedures like interviews and candidate screening. These days, businesses may utilize AI to collect and process data in real-time, then use the updated data to guide decisions. AI technologies make it possible to create an automatic real-time employee feedback system that can receive input from staff members at the right moment and location, which helps to resolve challenging issues at work. Therefore, a real-time system can support employees' career/professional development and learning process. Large datasets, both structured and unstructured, may be analyzed in real time by AI systems, which can then identify patterns and designs. AI can help managers identify abnormalities by providing real-time understanding of early warning indicators of serious problems, enabling them to take appropriate corrective action in a timely manner. Costs are decreased by the efficient use of resources and services made possible by real-time interactions. A significant amount of real-time data is being produced by the latest technologies, including the Internet of Things, which are enabling physical things to link to the digital world. AI-enabled live video interviews with candidates from other nations assist to process more applications more quickly.

Saving & Cost Reduction: Shorter response times and reduced costs can undoubtedly be achieved by combining AI-based HR procedures with a skilled and experienced HR team, claim Sołek-Borowska and Wilczewska (2018). Artificial intelligence (AI) and other contemporary technologies are used in the HR process to ensure project completion and to help organizations save time and money. One of the key benefits of using AI in HR is cost reduction; machine learning (ML) algorithms can actually reduce the likelihood of employing or rejecting qualified but underqualified candidates, which reduces costs (Gromov et al., 2018). Businesses aspire to implement AI-based automation processes across the HR functional domains to reduce human labor and time spent on repetitive operations (Nawaz & Gomes, 2019).

Limitations of the Study

The following research restrictions have been identified by the researcher in order to carry out this study: This study's primary limitation was the small number of recruitment professionals who answered the survey or questionnaire. Professionals were emailed 150 Google forms, but only 19 of them responded. A 20% response rate is reasonable, nevertheless, if the data gathered is of high caliber. A significant amount of time is needed for the research in order to gather and analyze the data from respondents. Nevertheless, there is a deadline for this study, which further restricts the data analysis. Second, responder mistake is an additional potential constraint. When answering the questionnaires, participants could provide incorrect information. To counter this, the surveys' questions were simple to understand and were easy to understand and left little room for confusion.There are chances that the employees might have misinterpreted the questionnaire also. (Source – ideal.com, 2019)

Methodology

The research design is descriptive in nature. The purpose of the study is to determine the results of integrating AI into HRM procedures and investigate the connections between those results. In order to obtain current and pertinent information on the chosen topic, the study was built using primary data collected from the respondents as well as secondary data from a variety of sources, including reports, research article databases such as Scopus, Emerald, Elsevier, Google Scholar, and online open-access journals. The researchers focused on the workers of particular IT companies in Chennai City that utilize AI technologies in HRM procedures in order to examine the possible results of applying AI in HRM and the correlation between those variables.

1. **Research design**

The research design used in the study was cross-sectional and descriptive. Because it enables the gathering of data from a sizable population at a particular moment in time, the research approach is suitable for examining the effects of AI on the digitization of human resources in Industry 4.0 [61]

2. **Population and sampling**

The study's participants were human resource professionals working in the

manufacturing, IT, ITES, and service industries in Bengaluru and Chennai. The selection of these two cities was based on their diverse sectors. Private sector banks were included to the service sector. A multi-stage sampling technique was used in the study, with the first phase being the selection of a geographic location, the second being the ranking of the enterprises in each sector, and the third being the selection of respondents from the selected firms. After additional scrutiny, 271 of the 360 questionnaires that were delivered using a Google Form were deemed suitable for study, yielding a 75% response rate. Based on earlier miresearch, a sample size of 271 can be justified

3. **Scale development and validation**

By altering closely related literature, new scales were created to measure the constructs used in the study model. The efficiency of the scales in assessing the constructs was then confirmed by testing them for a number of validity and reliability metrics [64]. [65] states that reliability is the consistency of measurement over time, whereas validity is the degree to which a scale measures what it is supposed to measure. Confirmatory factor analysis (CFA) was used in this study to assess the measures' validity and reliability. The scales demonstrated good construct validity and reliability, according to the CFA results. In particular, all constructs' composite dependability (CR) scores above the suggested cutoff point of 0.7, demonstrating strong internal consistency.

4. **Data collection**

Data supporting the research was gathered using a standardized questionnaire. Demographic questions make up the first section of the three-part instrument. Statements assessing human resource agility make up the third and final section, whereas the second section discusses AI applications in HRM. The five-point Likert scale was employed in both sections two and three.

5. **Data analysis**

SPSS was used for initial statistical analysis of the gathered data, while AMOS was used to test the suggested model. Several validity and reliability tests were performed on the scales used in this study, and the results showed that they were good enough to move forward with the investigation.

6. **Result Discussion**

Since a competent specialist offers them various benefits that increase productivity and revenue, managers are very concerned about the health and well-being of their employees [71]. HR departments can screen and monitor employee well-being using related devices. Wearables have the ability to gather several types of data, such as food entry, walking distance, and representative readings. With the information gathered, HR personnel can identify problems that are impacting health and leading to medical difficulties and take appropriate precautions to avoid them. HR can use AI to accomplish their goal of enhancing worker well-being. To protect their representatives, they can scan gas pipelines, hardware, and machines [72].

HR staff can identify elements such as specific work hours or foundation disturbances that divert a worker by employing a device that uses sensors to track the eyes of the employees and identify their movements. HR professionals might use it to compile information on eye strain while on duty. Assume that a worker's productivity declines if they feel like dozing off for a few hours in the early evening. By setting up a life skills training program, HR can help its staff strike a balance between working and leading healthy lives. This will guarantee that workers actively focus on their tasks while on duty and guarantee increased output. This is the outcome of increasing agility through the digitization of the HR process. Here, the findings corroborate the earlier research.

Conclusion

The HR department and employees gain a lot from implementing AI in HRM. But those benefits come with some risks to network security and legal issues. increasingly devices come with increasingly significant risks of network security breaches, and gathering more employee data suggests greater security issues. Organizations must make sure that the privacy of their employees is protected before implementing AI for HR. In order to reduce network security risks, associations must also develop information-driven security to filter information itself rather than just organizations. The implementation of AI ideas in a variety of potential HRM domains has been covered in the paper. These places may not be included in the regular course of activities. Nonetheless, it is making an effort to highlight how important it is to solve the same—the aspects evaluated under that show how AI might help to improve human traits. The result illustrated how these elements impact HRM's agility. The closed-

related technological implications of ONA and HR digitalization enable the iterative process of function. Both of the above mentioned components necessitate an excellent organizational structure in order to be implemented and advanced. Thus, this study paved the way by tying together two elements that are common in the present Industry 4.0 era.

Acknowledgment

I am Prof. Dalvi Neha Satish thankful to HOD Dr. Arjun Bhagwat Sir department of Commerce and management Savitribai phule pune university for granting permission to carry out the work.

Financial support and sponsorship

Nil.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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